



## WATER MANAGEMENT DIVISION MONTHLY REPORT

### Information Exchange Bulletin

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Prepared by: U.S. Army Engineer Division,  
Great Lakes and Ohio River, PO Box 1159,  
Cincinnati, OH 45201-1159

### RESERVOIR OPERATION AND SYSTEM STATUS FOR NOVEMBER 1999

**HIGHLIGHTS** – Cairo began the month at 11.54' and crested at 17.69' on the 30<sup>th</sup>. Normal stage for November is 21 feet.

**WEATHER** – The weather during November was very warm and generally dry. Precipitation was far below average in Illinois and Indiana, where it was generally less than 25 percent of normal, and below normal for Kentucky, much of Ohio and Tennessee. Eastern Ohio, West Virginia and Pennsylvania, however, did get normal to above normal rainfall during the month. Temperatures averaged much above normal for the month as upper air jets stayed to the north.

The following table summarizes temperature and precipitation for November:

#### TEMPERATURE AND PRECIPITATION – NOVEMBER 1999

STATION	TEMPERATURE		PRECIPITATION	
	OBSERVED DEGREES F	DEPARTURE FROM NORMAL	OBSERVED INCHES	DEPARTURE FROM NORMAL
Pittsburgh, PA	46.7	+4.4	3.46	+0.61
Charleston, WV	48.9	+2.1	4.53	+0.94
Columbus, OH	47.5	+4.6	1.95	-1.27
Cincinnati, OH	48.5	+4.2	1.42	-2.04
Louisville, KY	52.8	+5.7	1.56	-2.14
Indianapolis, IN	48.8	+5.8	0.69	-2.54
Evansville, IN	51.3	+5.1	0.51	-3.22
Nashville, TN	51.0	+1.0	2.99	-1.13

**STREAMFLOW** -- Ohio River monthly average flows for November ranged from a low of 56

percent of normal at Paducah, KY to a high of 88 percent of normal at Huntington, WV. Daily flows ranged from a low of 13 percent of normal at Cincinnati, OH to a high of 287 percent of normal at Huntington, WV.

The following table presents the flow data summary for November at the Ohio River Index Stations:

**FLOW DATA – NOVEMBER 1999**

STATION	AVERAGE MONTHLY FLOW	PERCENT LONG-TERM NORMAL		
		MONTHLY	DAILY	
	CUBIC FEET/SECOND		HIGH	LOW
Pittsburgh, PA	18,146	82	243	23
Huntington, WV	39,000	88	287	13
Cincinnati, OH	39,033	73	224	13
Louisville, KY	41,267	70	218	15
Evansville, IN	38,300	57	186	19
Paducah, KY	76,967	56	116	33

**RESERVOIRS** -- November started with 1.8% utilization of the total system flood control storage and ended the month at 3.6%. System-wide augmentation storage increased from 83.2% at the beginning of the month to 86.2% by the end of the month. Significant flood storage utilization in excess of 25% occurred at only one of the reservoir projects during November, 32.2% at Union City.

The following table depicts storage change by tributary reservoir subsystem for November:

CHANGE IN STORAGE TRIBUTARY-RESERVOIR SUBSYSTEM	(ACRE-FEET)
Allegheny-Monongahela-Beaver	+153,300
Muskingum-Little Kanawha-Hocking-Kanawha-Guyandotte	-92,700
Twelvepole-Big Sandy-Little Sandy-Scioto	-27,400
Little Miami-Licking-Mill Creek-Great Miami	-21,200
Kentucky-Salt-Green-Wabash	-165,800

Cumberland	-325,600
<b>TOTAL</b>	<b>-479,400</b>

RONALD A. YATES, P.E.  
Chief, Water Management Division